

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001109**Date Inspected:** 26-Dec-2007**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	ZPMC - Ye Yong Jun and Lu Jian			CWI Present:	Yes	No
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No N/A
				Delayed / Cancelled:	Yes	No N/A

Bridge No: 34-0006**Component:** 114m, 89m and 77m Mock-up**Summary of Items Observed:**

On this date, the Caltrans Quality Assurance (QA) representative, John P. Tracy, conducted assessments while on site at Zhenhua Port Machinery Company (ZPMC) for Caltrans Project 04-0120F4-SAS. The following is the detailed review of the following observations:

Bay 1:

Submerged Arc Weld (SAW) gantry welder is inactive. ZPMC continues to set up the equipment; however, no thermal operations have been noted for project components. The #1 deck mock-up, closed U-rib Partial Joint Penetration (PJP) welds are being evaluated by American Bridge Fabricator (ABF) and Caltrans Inspector, Mr. Alfredo Acuna, by means of Angle Beam Ultrasonic Testing (ABUT). The area is set up for ABUT and operations are on going.

Bay 2 operations:

The 77m mock-up has fit-up and tack welding complete. ZPMC welders continue to install lifting lugs to the exterior per WPS-B-P-2213-TC-U5B with Shielded Metal Arc Weld (SMAW) process. Tack welds for the diaphragm to skin attachment welds are being performed in multiple location for the mock-up. Multiple areas have ceramic preheat pads in place to keep continued welding operations active. The Caltrans representative monitored preheat operations with 200 and 230 degree centigrade Tempilstik brand temperature indicators. No welding operation were observed.

89m mock-up, MUSB-MA22 (Skin D) has welding being performed at the connection plates to the top of the longitudinal stiffeners via SMAW process with ZPMC welders Ge Hongqi (037780) and Wang Zhonghua

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(053753) under WPS-B-T-4312-TC-P5-1. The Caltrans representative has observed ZPMC Quality Control (QC) inspectors taking welding parameters and they appear to be in accordance with the criteria set forth within contractual documents. The ZPMC welders, Ge Hongqi (037780) in particular, are having cleaning issues on this component. The Caltrans QA representative observed the welder utilizing improper techniques for the cleaning of weld material prior to additional weldment deposition. The connection plate attachment welds were both insufficiently cleaned and appeared to be of poor visual standard. The welder is not equipped with the proper tools to insure proper weld purity. He utilizes a makeshift chipping hammer and paintbrush for the cleaning. Notification to American Bridge Fabricator (ABF) inspectors Kevin Dye and David La Rue was given, following these observations. The Caltrans representative notified Task Leader, Mr. Albert Carreon of his findings and incident report number 04-0120F4_TL-15_B97_12-26-07_ABF_000022 was initiated after Mr. Carreon and the Caltrans representative discussed the findings with Caltrans Assistant Structural Material Representative (ASMR), Mr. Peter Dautermann.

89m MUSB-MA25-16A and -16B, shear link assembly, has ceramic preheat pads in place and active for welding operations. QC personnel were present and appeared to be waiting for welders. The Caltrans representative verified the surrounding temperatures with a Tempilstik brand temperature indicator in which a 200 degree centigrade indicator melted however, a 230 degree centigrade indicator did not melt. No welding operations were observed. The Flux Cored Arc Weld (FCAW) wire had time and date markings on the spool that was within the 8 hour time frame from being issued.

114m upper and lower sections of the mock-up appear to be inactive, per the fabrication plan. Scaffolding is being removed and Ultrasonic Testing (UT) inspections was performed. Several indications were noted by ZPMC UT inspectors.

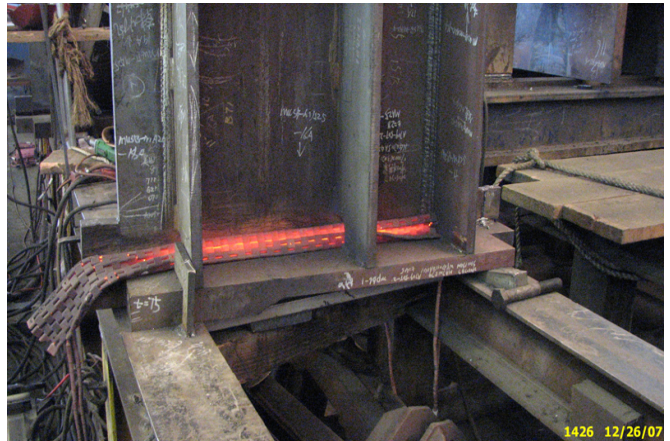
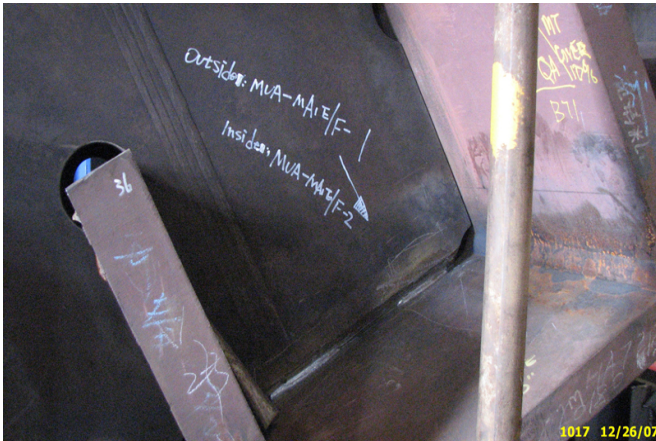
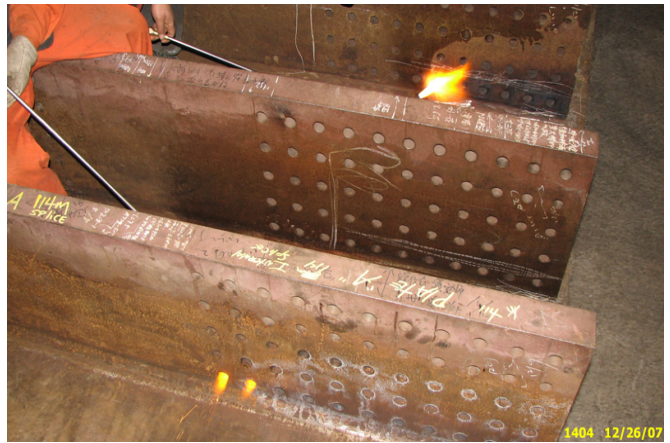
114m interior splice plate, MUC-A58, plate A received the approved heat straightening procedure. ZPMC Certified Welding Inspector (CWI) Lu Jian Ping was onsite for HSR(CT)027 revision 0 for a correction of "about 5mm". The CWI was attentive throughout the process and all observed temperatures and techniques appeared to be in conformance with the criteria set forth within contractual documents.

Electrode Storage Room- The consumable electrode issue logs are still completely written in Chinese characters and after several attempts to rectify them. Welding consumable drying temperatures and the welding consumable drying log was observed today for the first time by the Caltrans representative. The Caltrans representative observed a hand-made sign written in Chinese characters hanging from the handle of the oven. The digital temperature indicator readout was 238 degrees centigrade. The consumable electrode issue log indicated that the drying process had been ongoing for one hour and had one additional hour remaining for TL-508 (3.2mm and 4.0mm) SMAW electrodes.

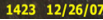
Included below are digital pictures that support the observations recorded within this report.

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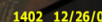


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Summary of Conversations:

At the completion of the above stated dimensional inspections the ZPMC Certified Welding Inspectors, Ye Yong Jun and Lu Jian Ping, reported that the parameters followed and their noted results were found to be in accordance with the criteria set forth within the contractual documents.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Tracy,John	Quality Assurance Inspector
Reviewed By:	Cuellar,Robert	QA Reviewer